REMARKS

Claims 1-20 are pending in this application. Of these pending claims, claims 1-18 and 20 stand rejected and claim 19 stands objected to.

By this amendment, claims 1, 4, 8, 10, 11, 14, 15, 17, 19, and 20 have been amended and claims 2, 3, 5, 13, 16, and 18 have been canceled without prejudice.

The basis for these amendments can be found throughout the specification, claims and drawings as originally filed. No new matter has been added. The preceding amendments and the following remarks are believed to be fully responsive to the outstanding Office action and are believed to place the application in condition for allowance.

In view of the preceding amendments and the following remarks, the rejections are traversed and reconsideration of this application is respectfully requested.

OBJECTED TO CLAIM

As discussed with Examiner Abelson on July 15, 2002 and July 16, 2002, it was noted that dependent claim 19 was identified as being objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form, including all of the limitations of the base claim and any intervening claims. It was also noted that claim 19 was identified as being rejected under 35 U.S.C. §103(a). Upon further review of the Office action and upon further discussing this matter with Examiner Abelson, it was noted that it appears that the combination of dependent claim 19, along with dependent claim 18, which dependent claim 19 depends on, in combination with independent claim 16 is not taught by the art of record. Accordingly, objected to dependent claim 19 has now been placed into independent form, including all of the

limitations of dependent claim 18 and independent claim 16. Applicant respectfully submits that independent claim 19, along with its corresponding dependent claims are in allowable form.

REJECTIONS UNDER 35 U.S.C. §102 & §103

Claims 1-4, 8-11, and 16 stand rejected under 35 U.S.C. §102(e) as being anticipated by Schmidt (U.S. Patent No. 5,754,536); claims 6-7, 13, 15, 16, and 20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Schmidt, and further in view of Knudsen (U.S. Patent No. 5,448,621); claim 12 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Schmidt as applied to claim 11, and further in view of Dent (U.S. Patent No. 5,631,898); and claims 5, 14, and 18 stand rejected under 35 U.S.C. §103(a) as being unpatentable over the combination of Schmidt and Dent as applied to claims 1, 11, and 16, and further in view of Sorber (U.S. Patent No. 6,240,067). Applicant respectfully traverses these rejections.

Independent claim 1 has been amended to include accessing at least one communications system parameter selected from a group of communications system parameters including current active user terminal parameters, antenna pattern parameters, including illumination patterns, spacecraft/antenna pointing error parameters, including antenna offset errors and link condition database parameters, including adverse weather condition information.

Independent claim 11 has been amended to include that the central control processor minimizes intra-system interference between multiple user terminals by selecting appropriate frequency channel and time slots for each active user terminal to

provide maximum distance between user terminals operating on the same frequency channel and time slot.

In contrast, Schmidt is merely directed to a digital speech interpolation method and apparatus that increases the effective capacity of a limited-bandwidth system. In other words, Schmidt allocates what it refers to as "reuse units" based upon a traffic burst basis rather than on a "talk spurt" basis, which essentially transmits data when speech is detected. Throughout Schmidt, it identifies that the switching facility (SF) simply determines control channel uplink and downlink frequencies and time slots (see column 14, lines 14-15; column 16, lines 1-2; and column 16, lines 35-37). Schmidt, however, does not identify determining connection parameters to minimize intra-system interference based upon communications system parameters, as set forth in claim 1 or by selecting appropriate frequency channel and time slots for each active user terminal to provide maximum distance between user terminals operating at the same frequency and time slots, as set forth in independent claim 11. Accordingly, Schmidt does not anticipate, nor render obvious, Applicant's independent claims 1 and 11, along with the corresponding dependent claims.

Knudsen is directed to a dynamic reallocational spectral capacity in cellular communications systems based upon cell loading information. In other words, if a particular cell is overloaded, Knudsen assigns overlapping adjacent cells to handle this overload. Knudsen or the combination of Knudsen with Schmidt does not teach or suggest accessing the communications system parameters, as set forth in independent claim 1, nor selecting appropriate frequency channel and time slots for each active user to provide maximum distance between user terminals that are operating on the same

frequency and time slot, as set forth in independent claim 11. As such, Knudsen or the combination of Knudsen with Schmidt does not teach or suggest Applicant's independent claims 1 or 11, along with their corresponding dependent claims.

Dent is directed to a cellular satellite communications system that utilizes a multi-beam antenna. However, neither Dent, nor the combination of Dent with Schmidt and/or Knudsen teaches or suggests Applicant's independent claims 1 and 11, along with their corresponding dependent claims.

Sorber is directed to a method and apparatus for managing control messages in a communication system. Sorber simply refers to "communications link" in its background and summary of the invention (see column 1, line 66 - column 2, line 17). Sorber, however, does not teach or suggest accessing at least one communications system parameter selected from a group of communications system parameters that includes a link condition database that includes adverse weather condition information, as set forth in independent claim 1. Nor does Sorber teach or suggest minimizing intra-system interference between multiple user terminals by selecting appropriate frequency channel and time slots for each active user terminal to provide maximum distance between user terminals operating on the same frequency channel and time slot, as set forth in independent claim 11. Neither Sorber, nor the combination of Sorber with Schmidt, Knudsen and/or Dent teaches Applicant's independent claims 1 and 11, or their corresponding dependent claims.

By way of the foregoing discussion and amendments, Applicant has now demonstrated that the claims present in the application are not anticipated, or rendered obvious in view of the cited references, or the combination thereof.

Serial No. 09/187,370 TRW Docket No. 22-0009

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office action, and that the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested.

Respectfully submitted,

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Noel F. Heal
Registration No. 26,074

TRW INC.
Intellectual Asset Management
One Space Park, E2/6051
Redondo Beach, CA 90278
Telephone: (310) 823-4910
FAX: (310) 812-2687

Serial No. 09/187,370 TRW Docket No. 22-0009

ATTACHMENT FOR CLAIM AMENDMENTS
VERSION WITH MARKINGS TO SHOW CHANGES MADE
U.S. Serial No. 09/187,370; Filed: November 6, 1998

1. (Amended) A method for interference management of a processing communications satellite serving multiple user terminals in a satellite based cellular communications system, said method comprising:

receiving a request for service from a user terminal;

accessing at least one communications system parameter selected from a group of communications system parameters including current active user terminal parameters, antenna pattern parameters including illumination patterns, spacecraft/antenna pointing error parameters including antenna offset errors, and link condition database parameters including adverse weather condition information;

determining a connection parameter to minimize intra-system interference based upon the selected communications system parameter for the user terminal;

allocating the connection parameter to this user terminal; and

making a communications connection with the processing communication satellite by the user terminal using the connection parameter.

4. (Amended) The method as defined in claim [3] 1 wherein said active user terminal parameters includes locations of each active user terminal and frequency channels and time slots allocated to active user terminals.

8. (Amended) The method as defined in claim 1 wherein the [one] connection parameter is a frequency channel.

10. (Amended) The method as defined in claim 1 further comprising updating the group of communications system parameters after the communications connection ends.

11. (Amended) A satellite based cellular communications system for servicing multiple user terminals, said satellite based cellular communications system comprising:

a processing communications satellite, said processing communications satellite supporting communications uplinks and communications downlinks between the multiple user terminals; and

a network operations center having a central control processor, said network operations center communicating with said processing communications satellite on said communications uplinks and said communications downlinks, said central control processor minimizes intra-system interference between the multiple user terminals by [allocating a connection parameter to each user terminal based upon accessing a plurality of communications system parameters] selecting appropriate frequency channel and time slots for each active user terminal to provide maximum distances between user terminals operating on the same frequency channel and time slot.

14. (Amended) The satellite based cellular communications system as defined in claim 11 wherein said central control processor further minimizes intra-system interference by using a plurality of known communications system parameters includes user database parameters, antenna pattern parameters, spacecraft/antenna pointing error parameters, and link condition database parameters.

15. (Amended) The satellite based cellular communications systems as defined in claim [11] 14 wherein said central control processor periodically re-allocates said

connection parameters to each user terminal based upon an updated plurality of communications system parameters.

17. (Amended) The method as defined in claim [16] 19 further comprising redetermining the frequency channel and time slot allocation after a determination is made that the communications connection is still active.

19. (Amended) [The method as defined in claim 18 further comprising] A method for interference management a communications system servicing multiple user terminals, said method comprising:

receiving a request for service from a user terminal;

accessing a plurality of known communication system parameters from a user database, antenna pattern database, spacecraft/antenna pointing error database and link condition database;

determining a frequency channel and time slot parameter allocation for the user terminal to minimize intra-system interference based upon the plurality of communications system parameters;

allocating the frequency channel and time slot parameter to the user terminal;

making a communications connection by the user terminal using the frequency channel and time slot parameter;

periodically redetermining the frequency channel and time slot parameter allocation for the user terminal to continue to minimize intra-system interference; and

updating the databases after the communication connection has ended.

20. (Amended) The method as defined in claim [16] 19 comprising including within the plurality of communications system parameters location of active user terminals and frequency channel and time slots allocated to the active user terminals.